

ABSTRACT

[0046] Methods and apparatus for improved position determination of a device using multiple pseudo range measurements from transmitting sources at known locations, such as GPS satellites. A plurality of pseudo range measurements for each transmitting source are processed together to obtain a simplified maximum likelihood estimate for the pseudo range for that transmitting source at a common reference time. The processed pseudo range estimates for all transmitting sources are then combined using conventional position determination algorithms. This technique facilitates removal of raw measurement outliers prior to position determination, which results in improved (i.e., more accurate) position fixes of the device. In addition, improved measurement integrity monitoring of the pseudo range measurements is a feature of this invention.